

REMARKS

Reconsideration is respectfully requested in view of the amendments and remarks herein.

Rejection - 35 USC 103

Claims 1-13 stand rejected under 35 USC 103(a) as obvious over Shohi et al. US 6,383,647 ("Shohi"). Shohi is cited as describing plasticized poly(vinyl acetal) ("PVA") that can be polyvinyl butyral ("PVB") as claimed. The Action states that the claimed ratio is not expressly described in Shohi. The Action asserts that one of ordinary skill in the art would be motivated to use the claimed range since it reads on equal amounts of salts. In addition, the Action asserts that the results shown in the specification are not commensurate in scope with the claimed invention and fail to compare the claimed invention with the closest prior art.

Shohi describes an interlayer for laminated glass comprising a plasticized poly(vinyl acetal) resin film. The interlayer contains at least two salts selected from the group consisting of magnesium salts of carboxylic acids containing 2 to 10 carbon atoms and potassium salts of carboxylic acids containing 2 to 10 carbon atoms. (Column 4, lines 18-22.) These salts are intended to act as bond strength control agents. (Column 4, lines 22-23.) According to column 4, lines 37-44:

"In using said two or more kinds of salts selected from the group consisting of magnesium salts of carboxylic acids containing 2 to 10 carbon atoms and potassium salts of carboxylic acids containing 2 to 10 carbon atoms in combination, the salts forming the combination may both be magnesium salts or potassium salts or one of the salts may be a magnesium salt and the other a potassium salt."

All of the Examples in Shohi except one, show use of either two magnesium salts together. (There is a comparative example which uses potassium acetate alone.) Thus, for example, Example 1 uses a combination of magnesium acetate and magnesium 2-ethylbutyrate, and Example 3 uses a combination of magnesium acetate and magnesium 2-ethylhexylate. The Example using a combination of magnesium and potassium salts is Example 2, and that Example uses, as bond strength control agents, magnesium acetate and magnesium 2-ethylhexylate added at final concentrations of 20 ppm and 60 ppm, respectively. Applicants calculated that this results in a ratio of potassium (K) to magnesium (Mg) of 14.5 as shown in the following table.

Salt 1	Salt 1, ppm	Cation 1, ppm	Salt 2	Salt 2, ppm	Cation 2, ppm	Total Salt, ppm	Total K	Total Mg	Total Cations, ppm	Ratio K : Mg
KOAc	70	27.9	Mg2EB	.20	1.92	90	27.9	1.9	29.9	14.5

The amended claims all recite a plasticized polyvinyl butyral composition containing either (a) an adhesion control agent comprising a mixture of potassium and magnesium salts in a ratio that is in a range of from about 4:1 to about 5:1 (weight:weight, potassium:magnesium) or (b) an adhesion control agent comprising a mixture of potassium and magnesium salts in a ratio that is in a range of from about 2:1 to about 5:1 (weight:weight, potassium:magnesium) and wherein the salts are included in a total concentration of about 200 to about 1000 parts per million (ppm) based on the total weight of the composition. The adhesion control agents recited are neither taught nor suggested in Shohi. In addition, the data in the examples in the specification is commensurate in scope with the amended claims as applicants have demonstrated good performance in ratios of 2:1 to 5:1 (weight:weight, potassium:magnesium) and compares the invention to comparative examples having ratios of 10:1, 11:1, 12:1 and 25:1 (weight:weight, potassium:magnesium) and 0, which data applicants submit is representative of the results that would be expected with the all magnesium and 14.5:1 (weight:weight, potassium:magnesium) examples presented in Shohi. The edge pummel data for all of the samples of the invention was 0 mm, which was significantly better than the edge pummel values obtained with the comparative examples with higher ratios such as in Shohi. Further, experience shows that samples with only magnesium can exhibit low asymmetric adhesion, depending on the construction of the glass.

Given the above, applicants submit that Shohi does not teach or suggest the claimed invention and that the invention provides unexpectedly better results than would be expected from Shohi. Withdrawal is respectfully requested.

Amendments

The amendments are supported as follows.

The claims are amended for consistency by changing "PVB" to "polyvinyl butyral" throughout and by reciting "plasticized polyvinyl butyral" in the preambles.

Claim 1 is amended to recite that the concentration is "up to about" 1000 ppm in view of the language of claim 6. All of the other independent claims now recite that range.

Claim 3 is amended in independent form and recites that the plasticizer is tetraethylene glycol di(2-heptanoate) as supported at page 5, line 10 and the examples. Claims 4-5 are amended to depend from claim 3.

Claim 7 is amended so that it contains the range of claim 6 and is dependent on claim 3.

Claims 9-10 are cancelled in view of the amendments to claims 1 and 3.

Claim 13 is amended in the same manner as claim 1. Claim 36 is similar to claim 13 and corresponds to claim 3.

Claim 14 is based upon claim 13 and find support, among other places, in the paragraph on the bottom of page 7. Claim 34 is a similar claim that corresponds to claims 3 and 36.

Claims 15 is supported at page 6, lines 18-23.

Claims 16 and 36 are supported in original claim 1, as well as at page 4, lines 26-page 5, line 20.

Claims 17-19 are supported in the paragraph bridging pages 3-4.

Claims 20-27 are supported at page 4, line 26-page 5, line 11.

Claims 28-29 are supported at page 5, lines 13-20.

Claims 30-32 are supported at page 5, line 21-page 6, line 7.

Claim 35 is supported as at page 4, lines 19-25.

The paragraph at the bottom of page 2, the paragraph at the top of page 3 and the first full paragraph on page 4 are amended so that they are consistent with original claim 6 and the text page 4, line 6. Claim 6, as filed, recited an upper amount of "about 1,000."

The subject matter of original claims 2-12 is added to the Summary of the Invention.

In addition, the subject matter of original claims 6-8 is added to the first full paragraph on page 4.

The first full paragraph on page 5 is amended to list the names of two well-known plasticizers, since only their acronyms were listed.

Entry and consideration are respectfully requested.

In view of the foregoing, allowance of the above-referenced application is respectfully requested.

Respectfully submitted,



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